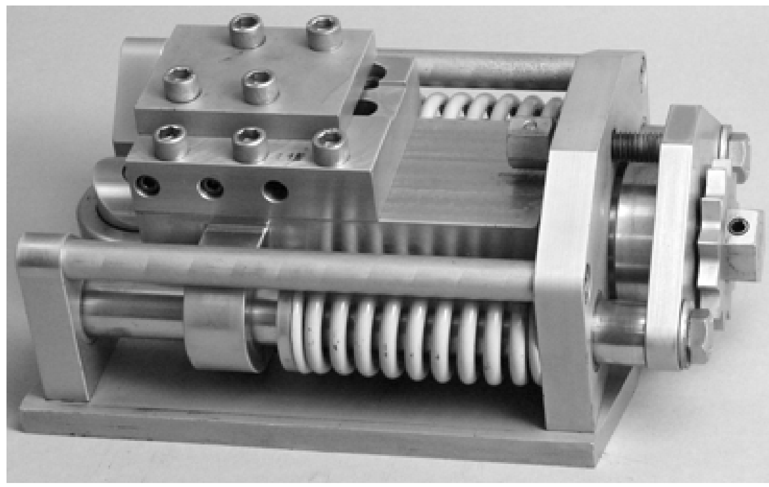
Large LCSF O.D. Tracking Slide User's Manual

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Rev. 3	April 2009

Table of Contents

Chapter 1

About the Large LCSF O.D. Tracking Slides

In This Chapter

PURPOSE OF THIS MANUAL

This manual explains how to operate and maintain the low clearance split frame O.D. tracking slides. It includes instructions for set-up, operation, and maintenance. It also contains parts lists and diagrams, and troubleshooting instructions to help you order replacement parts and perform user-serviceable repairs.

HOW TO USE THE MANUAL

This manual is organized to help you quickly find the information you need. Each chapter describes a specific topic on using or maintaining the equipment.

Each page is designed with two columns. This large column on the inside of the page contains instructions and illustrations. Use these instructions to operate and maintain the equipment.

The narrower column on the outside contains additional information such as warnings, special notes, and definitions. Refer to it for safety notes and other information.

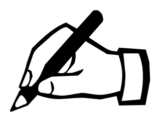
Throughout this manual, refer to this column for warnings, cautions, and notices with supplementary information.

Symbols and Warnings

The following symbols are used throughout this manual to indicate special notes and warnings. They appear in the outside column of the page, next to the section they refer to. Make sure you understand what each symbol means, and follow all instructions for cautions and warnings.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.



NOTE

This symbol indicates a user notice. **Notices** provide additional information to supplement the instructions, or tips for easier operation.

Manual Updates and Revision Tracking

Current versions of E.H. Wachs Company manuals are also available in PDF format. You can request an electronic copy of this manual by emailing customer service at sales@wachsco.com.

Occasionally, we will update manuals with improved operation or maintenance procedures, or with corrections if necessary. Revised accessory manuals will be available for customers. When a manual is revised, we will update the revision history on the title page and at the bottom of the pages.

You may have factory service or upgrades performed on the equipment. If this service changes any technical data or operation and maintenance procedures, we will include a revised manual when we return the equipment to you.

Equipment Description

The low clearance split frame O.D. tracking slides provide uniform cutting and beveling on pipes that are out of round or in situations where the split frame is not centered on the

pipe. The spring-tensioned tracking mechanism allows radial motion (perpendicular to the side of the pipe) of up to 1/2 inch, keeping the cutting tool on the pipe at all times and compensating for a maximum 1 inch out-of-roundness.

Two tracking slides are provided. One includes a tool fitting for a parting tool; the other can hold either a parting tool or a beveling tool. You can use these slides to perform a cutting and beveling operation, or an offset severing operation with two parting tools.

O.D. Tracking Slide Components

Figure 1-1 illustrates the components of the O.D. tracking slide.

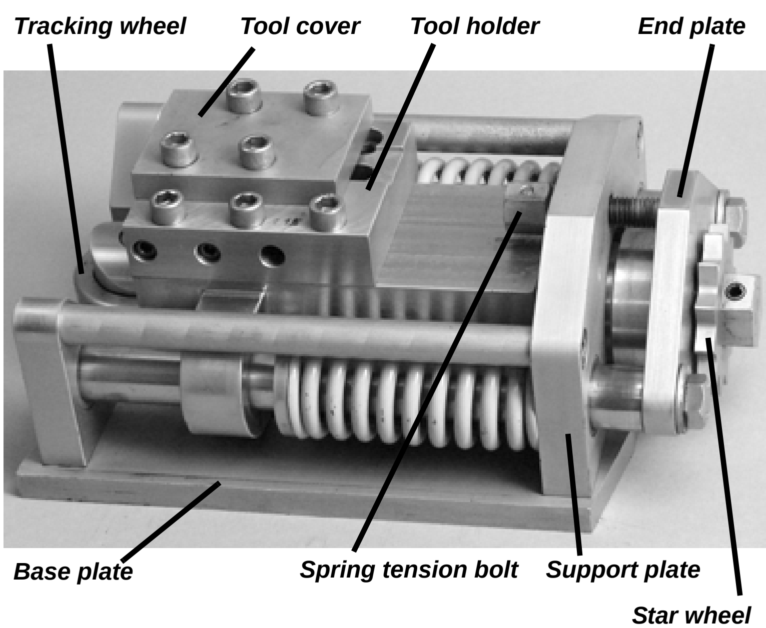


Figure 1-1. The photo illustrates the major components of the O.D. tracking slide.

Trip

A specialized trip is provided with the O.D. tracking slides. It includes an adjustable mount to position the trip through the range of tracking slide positions. The trip is spring-loaded so that it will kick out in high tool load situation; this

reduces the risk of stalling the machine, or breaking or damaging the tool.

Figure 1-2 shows the components of the trip.

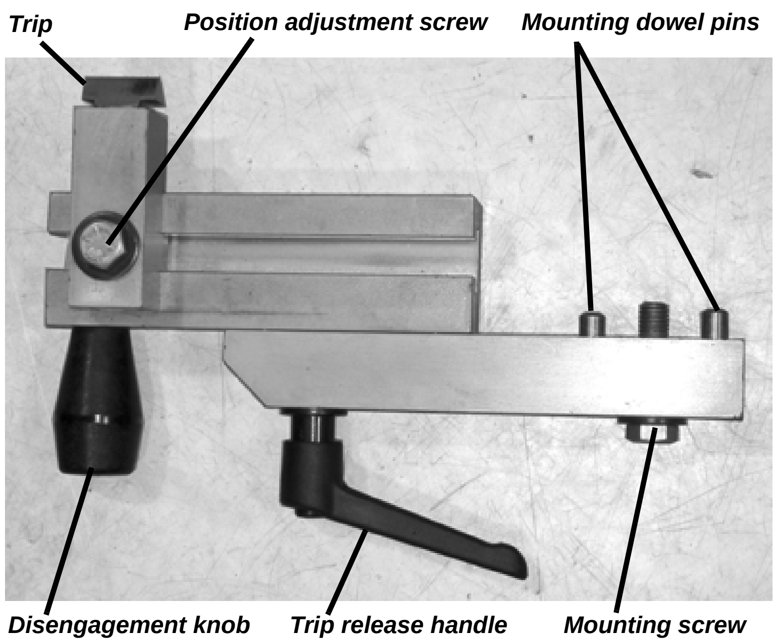


Figure 1-2. The photo illustrates the components of the adjustable trip used with the O.D. tracking slides.

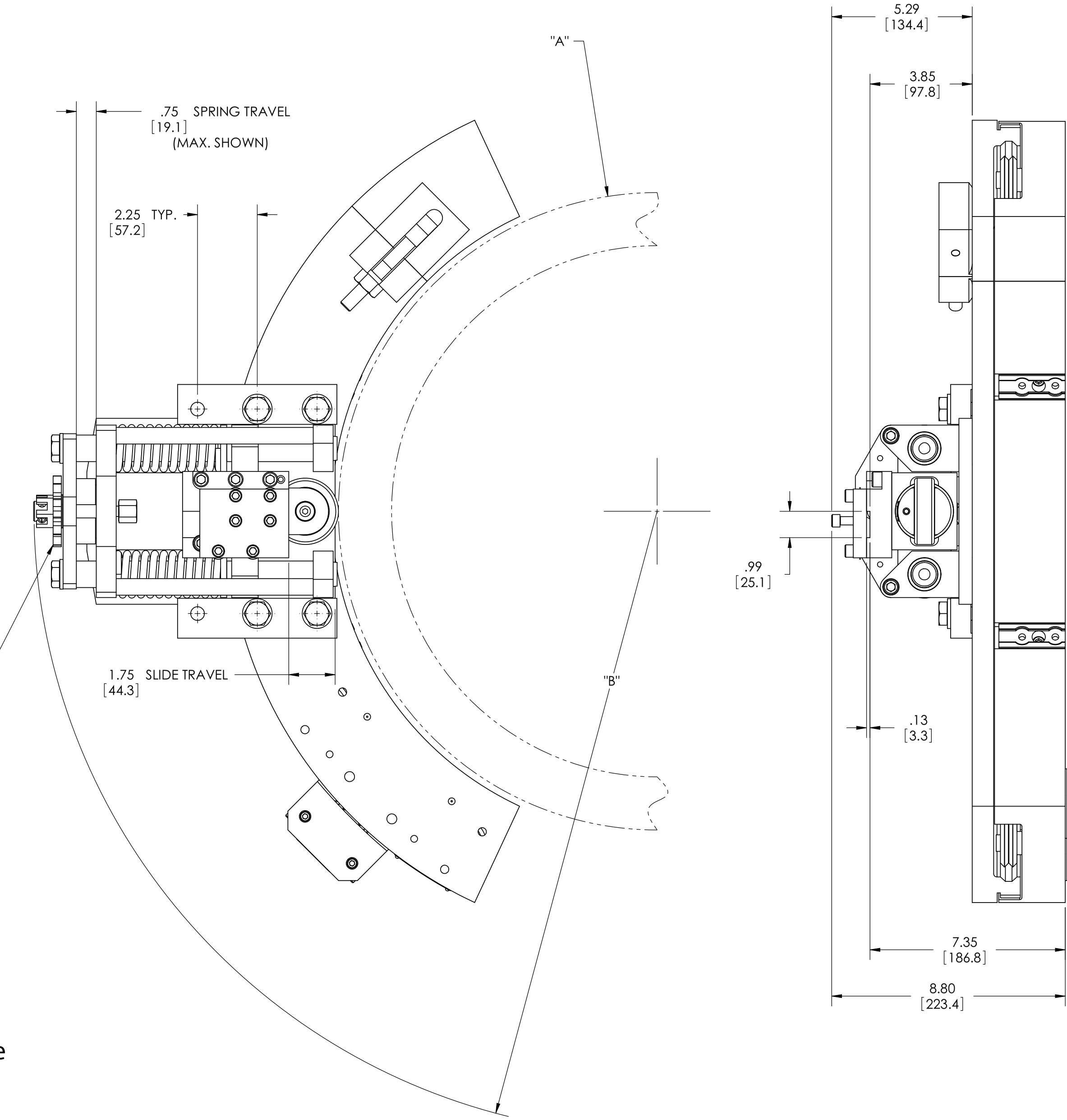
OPERATING ENVELOPE

The following drawings show the operating envelope for the O.D. tracking slides and trip on LCSF sizes from 24 to 48 inches (models 1824 through 4248).

MODEL	POSITION	DIM. "A" PIPE DIAMETER	DIM. "B" RADIAL CLEARANCE
LCSF 1824	MIN.	18.00 [457.2]	20.46 [519.7]
	MAX.	24.00 [609.6]	23.46 [595.9]
LCSF 2228	MIN.	22.00 [558.8]	22.46 [570.5]
	MAX.	28.00 [711.2]	25.46 [646.7]
LCSF 2632	MIN.	26.00 [660.4]	24.46 [621.3]
	MAX.	32.00 [812.8]	27.46 [697.5]
LCSF 3036	MIN.	30.00 [762.0]	26.46 [672.1]
	MAX.	36.00 [914.4]	29.46 [748.3]
LCSF 3339	MIN.	33.00 [838.2]	27.96 [710.2]
	MAX.	39.00 [990.6]	30.96 [786.4]
LCSF 3642	MIN.	36.00 [914.4]	29.46 [748.3]
	MAX.	42.00 [1066.8]	32.46 [824.5]
LCSF 4248	MIN.	42.00 [1066.8]	32.46 [824.5]
	MAX.	48.00 [1219.2]	35.46 [900.7]

-TABLE-

DIMENSIONS IN BRACKETS ARE MILLIMETERS

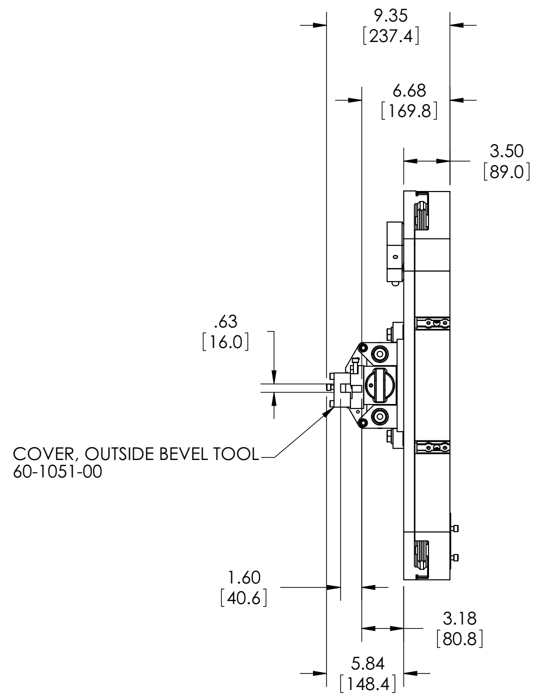


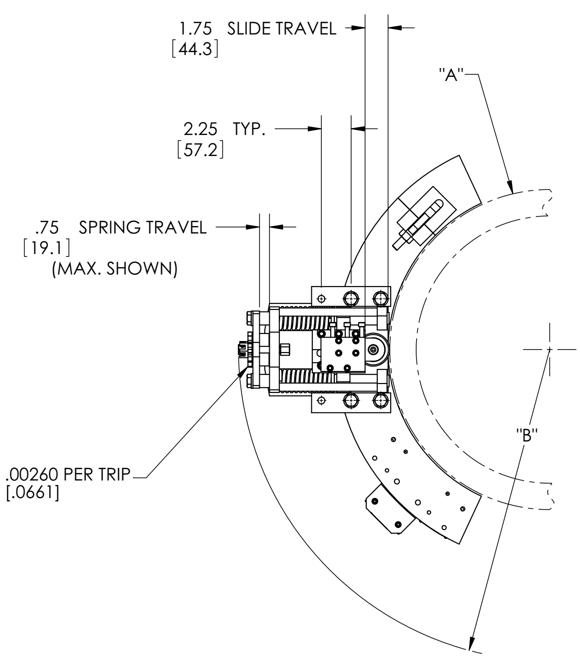
Operating Envelope
60-446-01, Large O.D. Tracking Slide
Parting Slide

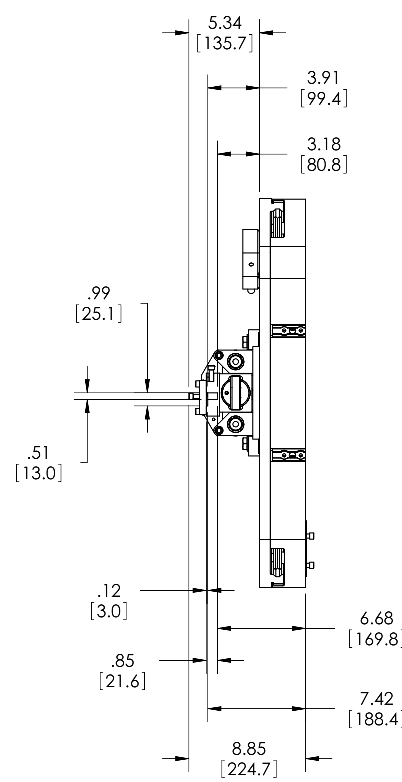
Operating Envelope
60-446-02, Large O.D. Tracking Slide Parting/Beveling Slide

-TABLE-			
MODEL	POSITION	DIM. "A" PIPE DIAMETER	DIM. "B" RADIAL CLEARANCE
LCSF 1824	MIN.	18.00 [457.2]	20.46 [519.7]
	MAX.	24.00 [609.6]	23.46 [595.9]
LCSF 2228	MIN.	22.00 [558.8]	22.46 [570.5]
	MAX.	28.00 [711.2]	25.46 [646.7]
LCSF 2632	MIN.	26.00 [660.4]	24.46 [621.3]
	MAX.	32.00 [812.8]	27.46 [697.5]
LCSF 3036	MIN.	30.00 [762.0]	26.46 [672.1]
	MAX.	36.00 [914.4]	29.46 [748.3]
LCSF 3339	MIN.	33.00 [838.2]	27.96 [710.2]
	MAX.	39.00 [990.6]	30.96 [786.4]
LCSF 3642	MIN.	36.00 [914.4]	29.46 [748.3]
	MAX.	42.00 [1066.8]	32.46 [824.5]
LCSF 4248	MIN.	42.00 [1066.8]	32.46 [824.5]
	MAX.	48.00 [1219.2]	35.46 [900.7]

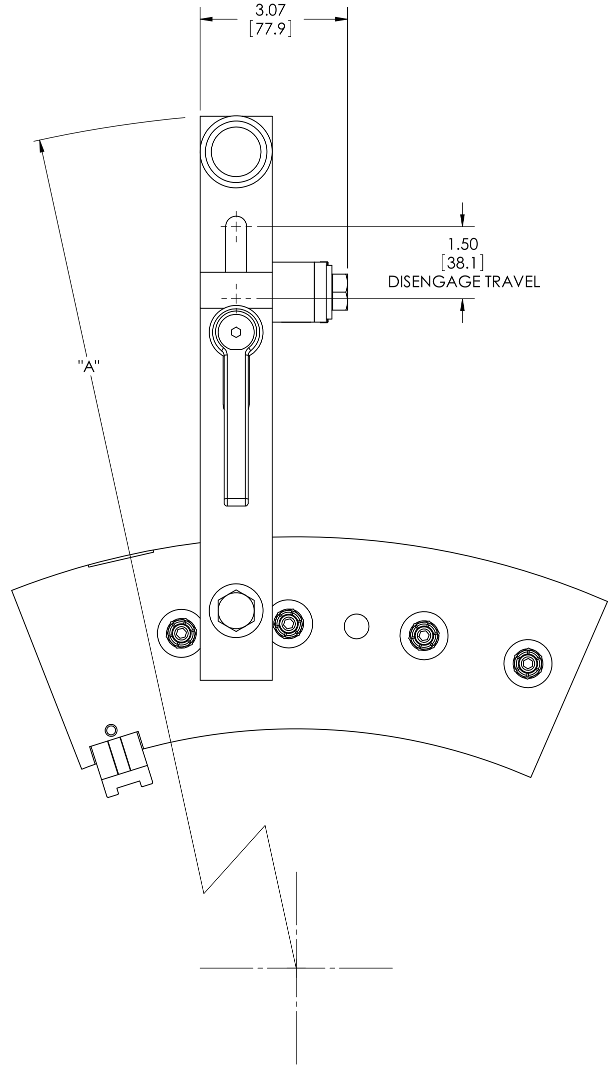
DIMENSIONS IN BRACKETS ARE MILLIMETERS

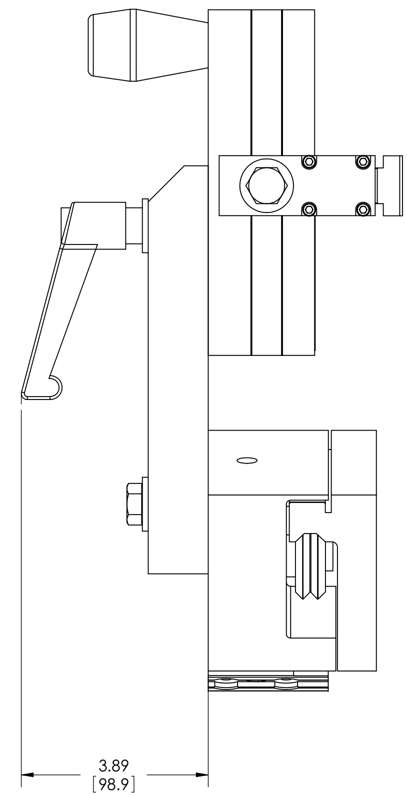






Operating Envelope 60-446-03, Trip Assembly for Large O.D. Tracking Slide





-TABLE-

MODEL	POSITION	DIM. "A" RADIAL CLEARANCE
LCSF 1824	MIN.	23.59 [599.2]
	MAX.	25.09 [637.3]
LCSF 2228	MIN.	25.58 [649.7]
	MAX.	27.08 [687.8]
LCSF 2632	MIN.	27.58 [700.5]
	MAX.	29.08 [738.6]
LCSF 3036	MIN.	29.57 [751.1]
	MAX.	31.07 [789.2]
LCSF 3339	MIN.	31.07 [789.2]
	MAX.	32.57 [827.3]
LCSF 3642	MIN.	32.57 [827.3]
	MAX.	34.07 [865.4]
LCSF 4248	MIN.	35.56 [903.2]
	MAX.	37.06 [941.3]

DIMENSIONS IN BRACKETS ARE MILLIMETERS

Chapter 2

Safety

E.H. Wachs takes great pride in designing and manufacturing safe, high-quality products. We make user safety a top priority in the design of all our products.

Read this chapter carefully before operating the LCSF with the O.D. tracking slides. It contains important safety instructions and recommendations.

FULL SAFETY INSTRUCTIONS AND GUIDELINES ARE IN THE MANUAL FOR YOUR LOW CLEARANCE SPLIT FRAME MACHINE. Make sure you read and understand all safety information in the LCSF manual.

SAFE OPERATING GUIDELINES

Follow these guidelines for safe operation of all E.H. Wachs equipment.

- **READ THE OPERATING MANUAL.** Make sure you understand all setup and operating instructions before you begin. Keep this manual with the machine.
- **INSPECT MACHINE AND ACCESSORIES BEFORE USE.** Before starting the machine, look for loose bolts or nuts, leaking lubricant, rusted components, and any other physical conditions that may affect operation. Properly maintaining the machine can greatly decrease the chances for injury.
- **ALWAYS READ STICKERS AND LABELS.** Make sure all labels and stickers are in place, clearly legible, and in good

In This Chapter



Look for this symbol throughout the manual. It indicates a personal injury hazard.

condition. Refer to "Safety Labels" later in this chapter for label locations on the machine. Replace any damaged or missing safety labels; see the ordering information at the end of this manual.

- **KEEP CLEAR OF MOVING PARTS.** Keep hands, arms, and fingers clear of all rotating or moving parts. Always turn the machine off and disconnect the power source before doing any adjustments or service.
- **SECURE LOOSE CLOTHING AND JEWELRY.** Secure or remove loose-fitting clothing and jewelry, and securely bind long hair, to prevent them from getting caught in moving parts of the machine.
- **FOLLOW SAFE PROCEDURES FOR HANDLING LUBRICANTS.** Refer to the manufacturer's instructions and the Material Safety Data Sheets.

Safe Operating Environment

- Do not use this equipment in a potentially explosive atmosphere. Fire or explosion could result, with the risk of serious injury or death.
- Provide adequate lighting to use the equipment, in accordance with worksite or local regulations.
- **KEEP WORK AREA CLEAR.** Keep all clutter and nonessential materials out of the work area. Only people directly involved with the work being performed should have access to the area.

Operating and Maintenance Safety

- This equipment is to be operated and maintained only by qualified, trained personnel.
- Make sure the equipment is stable when attached to the workpiece for the operation. Ensuring stability of the installed tool is the responsibility of the operator.
- Make sure the workpiece is supported adequately for installation of the equipment. This includes supporting any workpiece "fall-off" section when severing the workpiece. Ensuring support of the workpiece is the responsibility of the operator.
- Tooling on any cutting equipment—including lathe tools, saw blades, milling tools, etc.—may get very hot. Do not touch tooling until you have made sure it is cool enough to handle.

- Wear gloves when removing or cleaning up chips and cutting debris. Chips can be very sharp and cause cuts.
- Before performing any service on the equipment, disconnect the power source. Follow all lock-out/tag-out procedures required at the worksite.

Safety Alerts in This Manual

The following alerts are used throughout this manual to indicate operator safety hazards. In all cases, these alerts include a notice describing the hazard and the means to avoid or reduce risk. Carefully read all safety alerts.



This icon is displayed with any safety alert that indicates a personal injury hazard.

⚠ WARNING

This safety alert, with the personal injury hazard symbol, indicates a potentially hazardous situation that, if not avoided, **could** result in **death or serious injury**.

⚠ CAUTION

This safety alert, with the personal injury hazard symbol, indicates a potentially hazardous situation that, if not avoided, **could** result in **minor or moderate injury**.

Protective Equipment Requirements

Protective Clothing

Wear safety shoes when operating or servicing the equipment. Serious injury could result from dropping the machine or its components.

NOTE

Gloves should be worn when cleaning up chips and other cutting debris. Chips can be very sharp and can cause serious cuts. **Do not wear gloves when the machine is operating.**

Do not wear gloves while operating the machine. Gloves can become entangled in moving parts, resulting in serious injury. Gloves may be worn when setting up the machine or cleaning up after the operation, but take them off when operating the machine.

Eye Protection

Always wear impact-resistant eye protection while operating or working near this equipment.

For additional information on eye and face protection, refer to Federal OSHA regulations, 29 Code of Federal Regulations, Section 1910.133., Eye and Face Protection and American National Standards Institute, ANSI Z87.1, Occupational and Educational Eye and Face Protection.

Hearing Protection

This equipment can produce noise levels above 80 dB. Hearing protection is required when operating the equipment. The operation of other tools and equipment in the area, reflective surfaces, process noises, and resonant structures can increase the noise level in the area.

For additional information on hearing protection, refer to Federal OSHA regulations, 29 Code of Federal Regulations, Section 1910.95, Occupational Noise Exposure and ANSI S12.6 Hearing Protectors.

Safe Operation of the O.D. Tracking Slides

Refer to "Safe Operation of the LCSF" in Chapter 2 of the *Low Clearance Split Frame User's Manual* for full safety guidelines and instructions.

Intended Uses

The low clearance split frame O.D. tracking slides are designed to provide uniform cutting and beveling on pipes that are out of round, or in situations where the split frame is not centered on the pipe. The spring-tensioned tracking mechanism allows radial motion (perpendicular to the side

of the pipe) of up to 1/2 inch, keeping the cutting tool on the pipe at all times and compensating for a maximum 1 inch out-of-roundness.

Make sure to follow all safety guidelines and procedures required for machining operations at the work site, including personal protective equipment (PPE). Do not use the LCSF in a manner that violates these guidelines.

Proper Use of the O.D. Tracking Slides

- The LCSF and O.D. tracking slides should only be used by trained, qualified operators.
- The workpiece must be within the operating capacity of the O.D. tracking slides and LCSF model you are using. See operating envelope information and drawings in Chapter 1.
- Make sure the operating environment allows you to mount the machine securely and squarely on the workpiece.
- Make sure there is adequate clearance around workpiece and the LCSF/O.D. tracking slide combination to operate the machine controls as described in the operating instructions.

Misuse

- Do not attempt to mount or operate the LCSF and O.D. tracking slides on non-cylindrical workpieces.
- Do not attempt to mount or operate the LCSF and O.D. tracking slides on any workpiece to which the equipment cannot be securely mounted.
- Do not attempt to mount or operate the LCSF and O.D. tracking slides on any workpiece that is not stable enough to hold the equipment.
- Do not disable any safety feature of theO.D. tracking slides or LCSF, or remove any safety labeling. Replace worn or damaged safety labels immediately. (See “Safety Labels” later in this chapter.)

Potential Hazards

See the “Potential Hazards” section in Chapter 2 of the user’s manual for your low clearance split frame machine. Follow all guidelines for avoiding hazards associated with operating the machine.

O.D. Tracking Slide Safety Features

The large O.D. tracking slides include a guard to cover the pinch point between the support plate and the tracking bar end plate. Do not operate the slides without this guard installed. If you need to remove the guard for service, make sure the springs are released, and make sure to re-install the guard before operation.

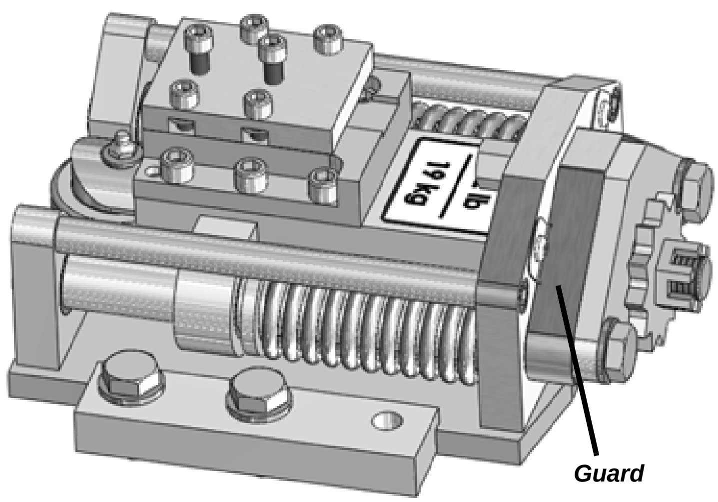


Figure 2-1. The O.D. tracking slides have a guard to keep fingers out of the pinch point at the end of the slide.

Safe Lifting and Handling

- Machines or assemblies over 40 lb (18 kg) must be lifted by two people or a lifting device. The large O.D. tracking slides weigh 42 lb (19 kg) each.
- It is the responsibility of the end user to determine whether a machine or assembly can be lifted by two or more people. A lifting device is recommended for machines or assemblies that cannot be handled easily by two people.

- It is **not** recommended that you lift the LCSF with the O.D. tracking slides attached. The assembled combination may not be balanced to enable safe lifting.

SAFETY LABELS

The safety labels below are attached to the O.D. tracking slide and trip assembly. Do not remove the labels. If a label is lost or damaged, order a replacement label from E.H. Wachs; see ordering instructions in Chapter 5.

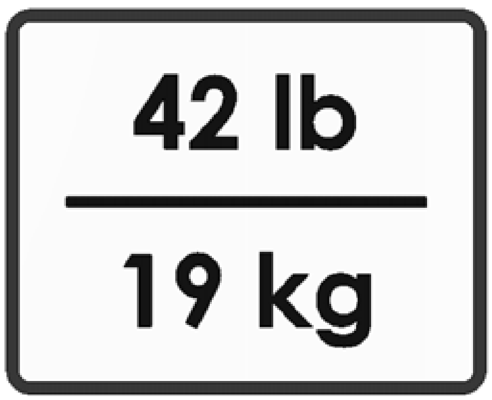


Figure 2-2. The weight label is attached to each O.D. tracking slide (part no. 60-1276-00).



Figure 2-3. The Moving Parts warning label is on the trip assembly (part no. 03-113-04).

Chapter 3

Operating Instructions

Before setting up the tracking slides, install your low clearance split frame according to the instructions in your split frame manual. The low clearance tracking slides fit within the clearance required for the split frame.

If the pipe you are cutting has an exposed outer seam, you will get better cutting peformance if you grind the seam down where the LCSF is mounted.

In This Chapter

INSTALLING THE TRIP

1. Locate the trip installation location on the stationary ring. There are three holes; the center hole is threaded.

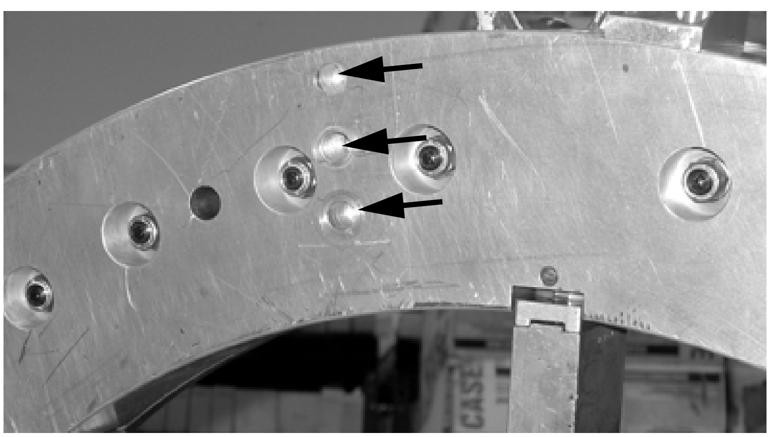


Figure 3-1. There are two dowel pin holes and one threaded hole at the trip location.

2. Align the trip assembly so that the dowel pins fit into the two unthreaded holes in the split frame.

3. Insert the screw into the center hold and tighten it securely.

SLIDE SET-UP FOR CUTTING AND BEVELING

1. Using a 1-1/8" wrench or socket, turn the feed screw on the back of the slide until there is a 1/4" gap between the guide bar mount and the spring retainer.

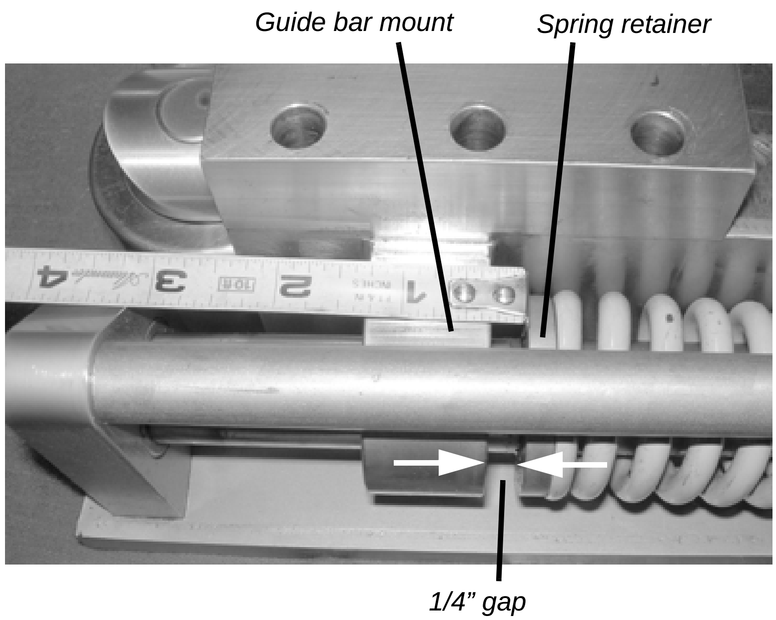


Figure 3-2. Preset the slide so there is a 1/4" gap between the guide bar mounts and the spring retainers.

2. Using a 3/4" wrench, turn the spring tension bolt on the slide until there is a 3/8" gap between the hex head and the support plate.

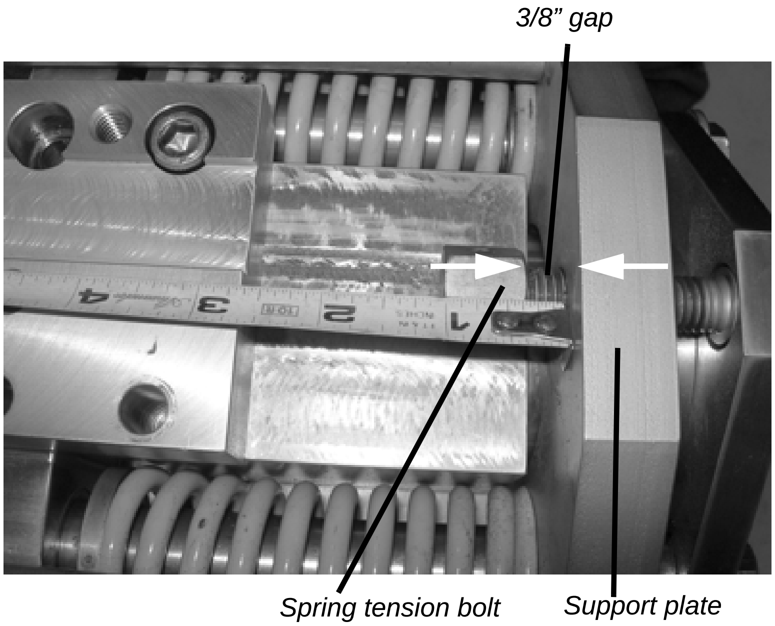


Figure 3-3. Set the spring tension bolt to a 3/8” gap from the support plate.

3. The tracking wheel will now extend about 1/8” past the base of the slide.

IMPORTANT:
If the wheel does not extend beyond the base, the base may contact the pipe surface during cutting. Machine damage may result.

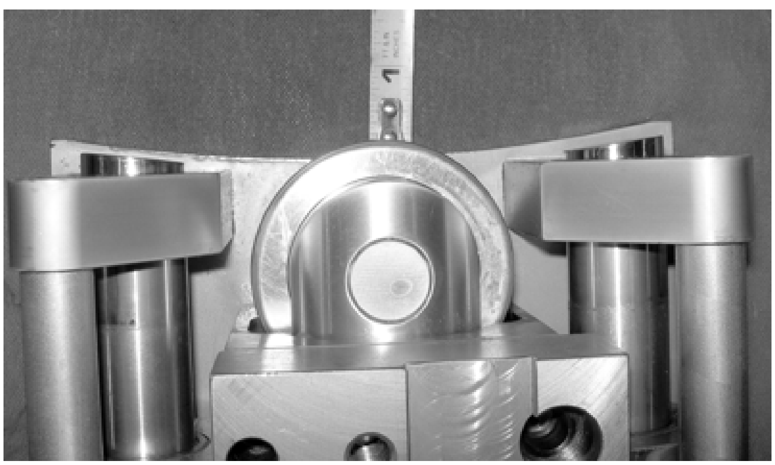


Figure 3-4. Check that the tracking wheel extends at least 1/8” past the slide base.

4. Repeat the previous steps for the other slide.
5. Insert the parting tool into the parting slide. Extend the tool out of the holder until the tip of it is about 1/8” back from the tracking wheel. Tighten the screws on the tool holder plate.

NOTE:
Check to make sure the parting tool does not extend past the tracking wheel.

NOTE:
Check to make sure the beveling tool does not extend past the tracking wheel.

6. Insert the beveling tool into the beveling slide. Extend the tool until the tip of it is about 1/8" back from the tracking wheel. Tighten the screws on the tool holder plate.

7. Position the slide mounting blocks for both slides on the split frame rotating ring and insert the mounting bolts, as shown in Figure 3-5.

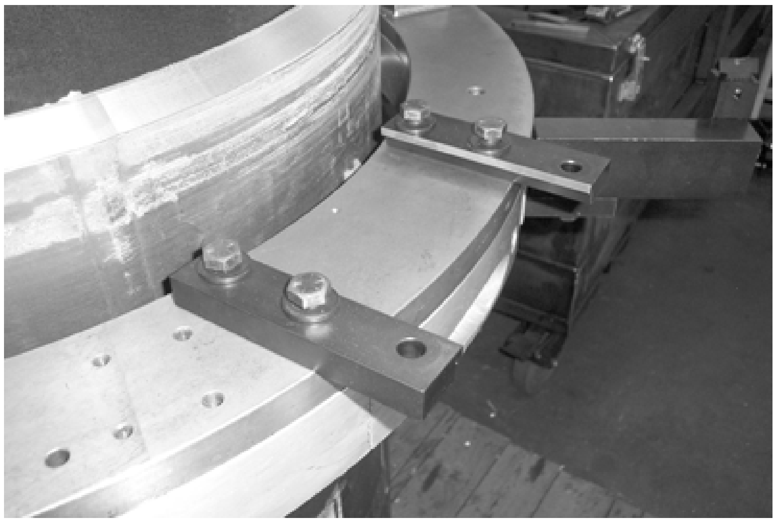


Figure 3-5. Install the slide mounting blocks on the rotating ring. Leave the mounting bolts loose. (If there is more distance between the LCSF and the pipe, move the blocks to the forward position.)

NOTE:
Do not tighten the mounting bolts yet. You will tighten them when you finish positioning the slide.

8. Mount both slides onto the rotating ring by sliding the base plate into the channels on the undersides of the slide mounting blocks. Move the slide forward until the tracking wheel contacts the pipe. Snug the mounting bolts just tight enough to keep the slide from moving freely.

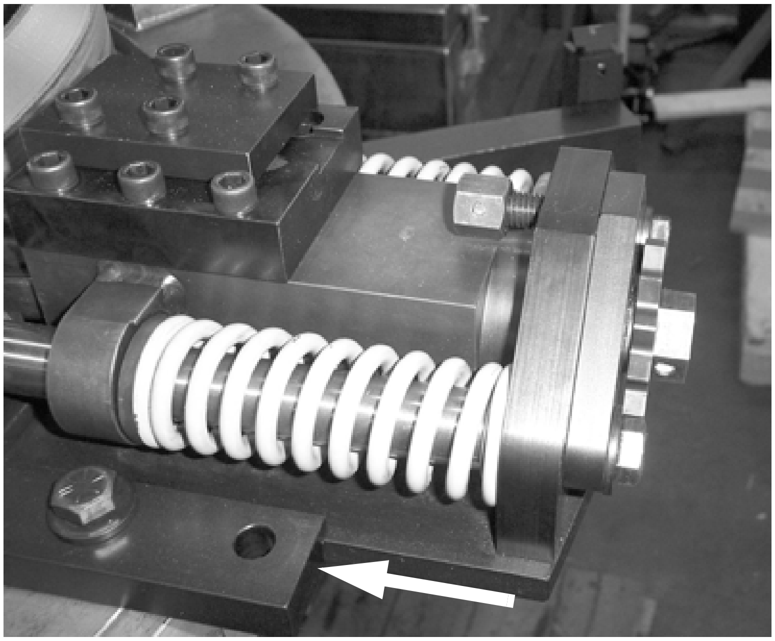


Figure 3-6. Slide the base plate of the tool slide into the channels of the slide mounting blocks until the tracking wheel touches the pipe surface.

9. If necessary, connect the drive motor to the LCSF.
10. Slowly rotate the LCSF one complete rotation around the pipe. As the tracking wheel follows the pipe surface, the slide is pushed back to find the “high point” on the pipe.
11. Securely tighten the bolts on the slide mounting blocks (30-40 lb-ft).
12. Retract the spring tensioning bolts on both slides all the way to load tension onto the springs.
13. Turn the feed screw on both slides to position both tools about 1/16” from the pipe surface.
14. Slowly rotate the LCSF to make sure there is clearance between the tool and pipe all the way around.
15. Move the split frame to position the star wheel over the trip. NOTE: You will have to use the motor drive to turn the rotating ring.
16. Loosen the position adjustment screw on the trip.



NOTE: Make sure the bolts on the slide mounting blocks are just snug, allowing the slides to move as the LCSF rotates.

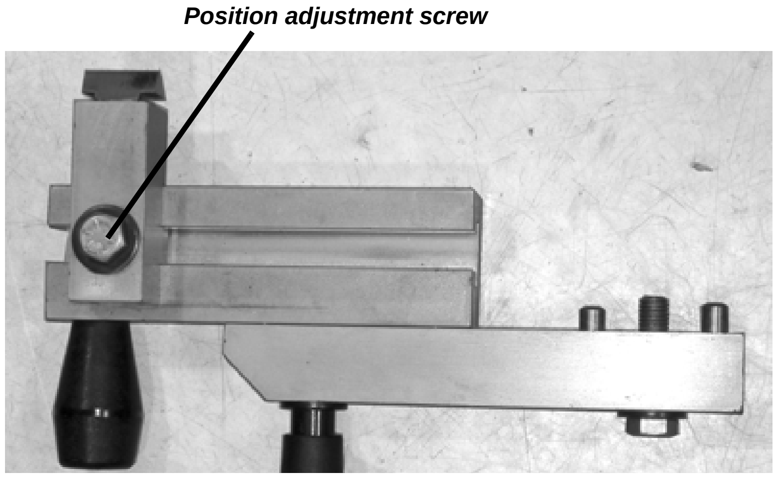


Figure 3-7. Loosen the position adjustment screw to adjust the trip radially.

17. Position the trip mount so that the star wheel strikes the center of the trip, as shown in Figure 3-8. Tighten the position adjustment screw.

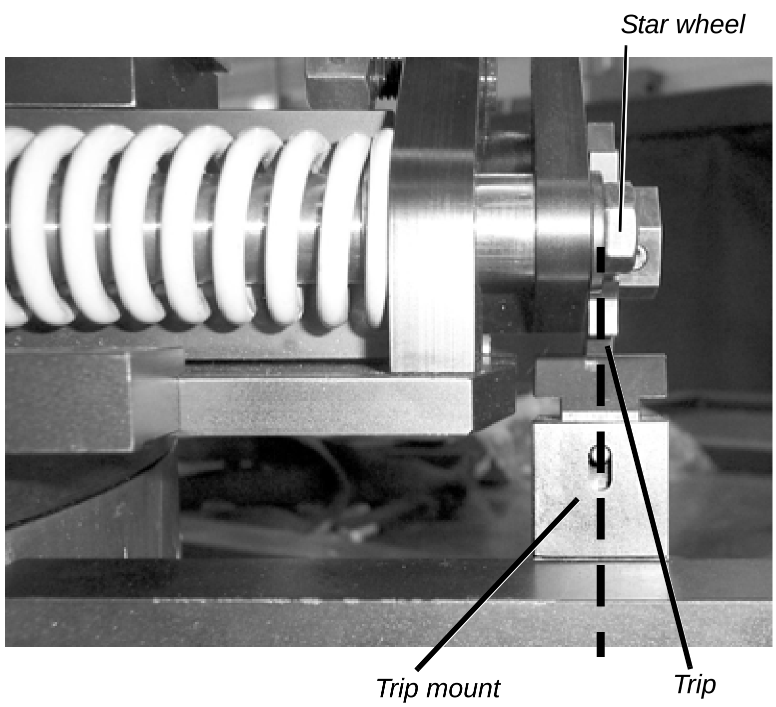


Figure 3-8. The trip mount should be positioned so that the contact points of the star wheel strike the center of the trip.

Slide Set-Up for Offset Cutting

Follow the same procedure as the previous section for installing both slides. When you set up the beveling slide, insert a parting tool instead of a beveling tool.

The beveling slide is designed to hold a parting tool with a 1/16” offset from the tool in the parting slide. This will result in a cut 1/16” wider than the cut made by a single parting tool.

IMPORTANT:
Do not operate the split frame with a single parting tool only. A beveling tool or second parting tool is required to keep the parting tool from binding in the cutting groove.

Operation

1. After you have installed the tracking slides, operate the split frame in the standard way as described in your manual.
2. When you start the machine, check to make sure that the star wheel on each slide feeds exactly one position per revolution. If the star wheel “double trips”, stop the machine and correct the problem as follows:

- Double-tripping can be caused by over-tightening the LCSF mounting legs near the trip. Slightly loosen the mounting leg nearest the trip and run the machine again.
- If the star wheel still double-trips, remove the trip and insert a thin shim washer between the trip base and the LCSF.

3. If you are operating with the split frame horizontal (cutting a vertical pipe), you may have to clear chips from the tracking wheels. Use compressed air to blow the chips out as the slides pass, or stop the machine and brush the chips out of the wheel assembly.
4. When the cut is finished, stop the LCSF.
5. Using a 1-1/8” wrench or socket, retract the feed nut on each slide until there is a 1/4” gap between the guide bar mounts and the spring retainers.

NOTE:
If the beveling blade contacts the pipe before the parting blade, stop the machine and adjust the slides.

IMPORTANT:
Watch the tracking wheels to make sure that they stay clear of chips.

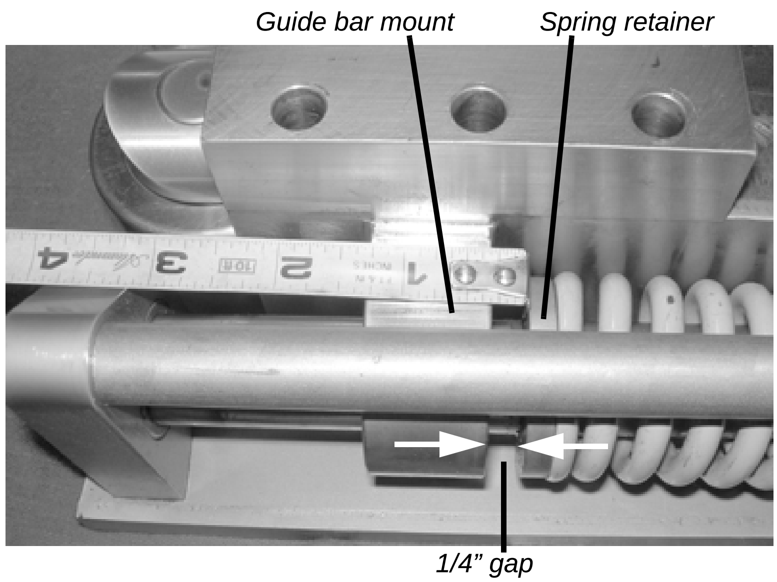


Figure 3-9. Reset the slide to a 1/4" gap between the guide bar mounts and the spring retainers.

6. Using a 3/4" wrench, turn the spring tension bolt on the slide to reset the 3/8" gap between the hex head and the support plate.

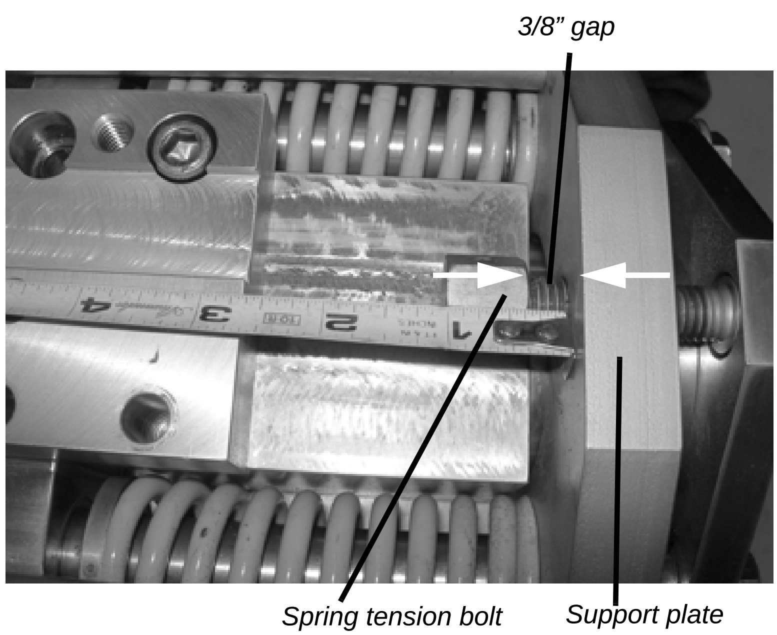


Figure 3-10. Reset the spring tension bolt to a 3/8" gap from the support plate.

7. Loosen the bolts on the slide mounting blocks and remove the slides from the LCSF.

Chapter 4
Maintenance

In This Chapter

LUBRICATION

Before each machining operation, lubricate the slide rods on both slides.

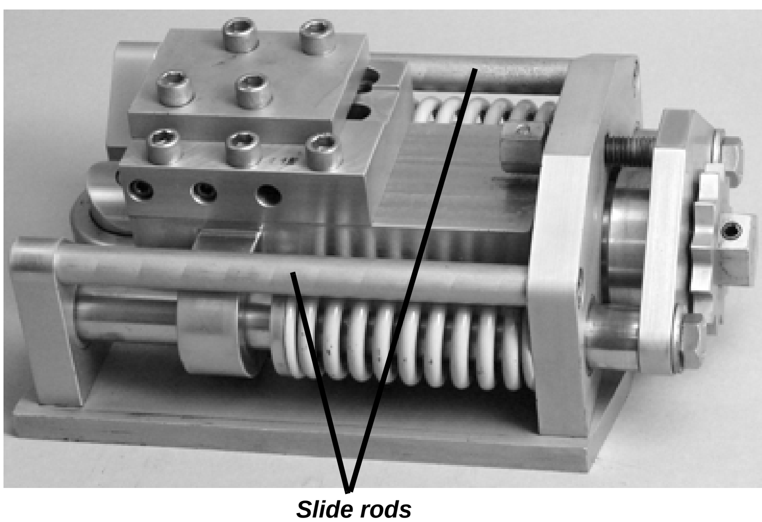


Figure 4-1. Lubricate the slide rods before each use of the slides.

Each time you use the slide, grease the tracking wheel. Remove the grease port plug and install the grease fitting, then apply grease through the fitting. Remove the fitting and replace the plug before operating the slide.



Figure 4-2. Remove the plug and install a grease fitting to grease the tracking wheel. After greasing the wheel, remove the grease fitting and replace the plug.

PERIODIC MAINTENANCE

After every cut, use an air nozzle to blow chips out of the slide, and spray the slide with WD-40 LPS rust inhibitor.

Every 8 hours of operation, remove and clean the tracking wheel and bearings on the slides.

Chapter 5

Parts List and Ordering Information

In This Chapter

ORDERING INFORMATION

To place an order, request service, or get more detailed information on any E.H. Wachs products, call us at one of the following numbers:

U.S.	800-323-8185
International:	847-537-8800

Ordering Replacement Parts

When ordering parts, refer to the parts lists earlier in this chapter. Please provide the part description and part number for all parts you are ordering. Always note your machine model number when ordering.

Repair Information

Please call us for an authorization number before returning any equipment for repair or factory service. We will advise you of shipping and handling. When you send the equipment, please include the following information:

- Your name/company name
- Your address
- Your phone number
- A brief description of the problem or the work to be done.

Before we perform any repair, we will estimate the work and inform you of the cost and the time required to complete it.

Warranty Information

Enclosed with the manual is a warranty card. Please fill out the registration card and return to E.H. Wachs. Retain the owner’s registration record and warranty card for your information.

Return Goods Address

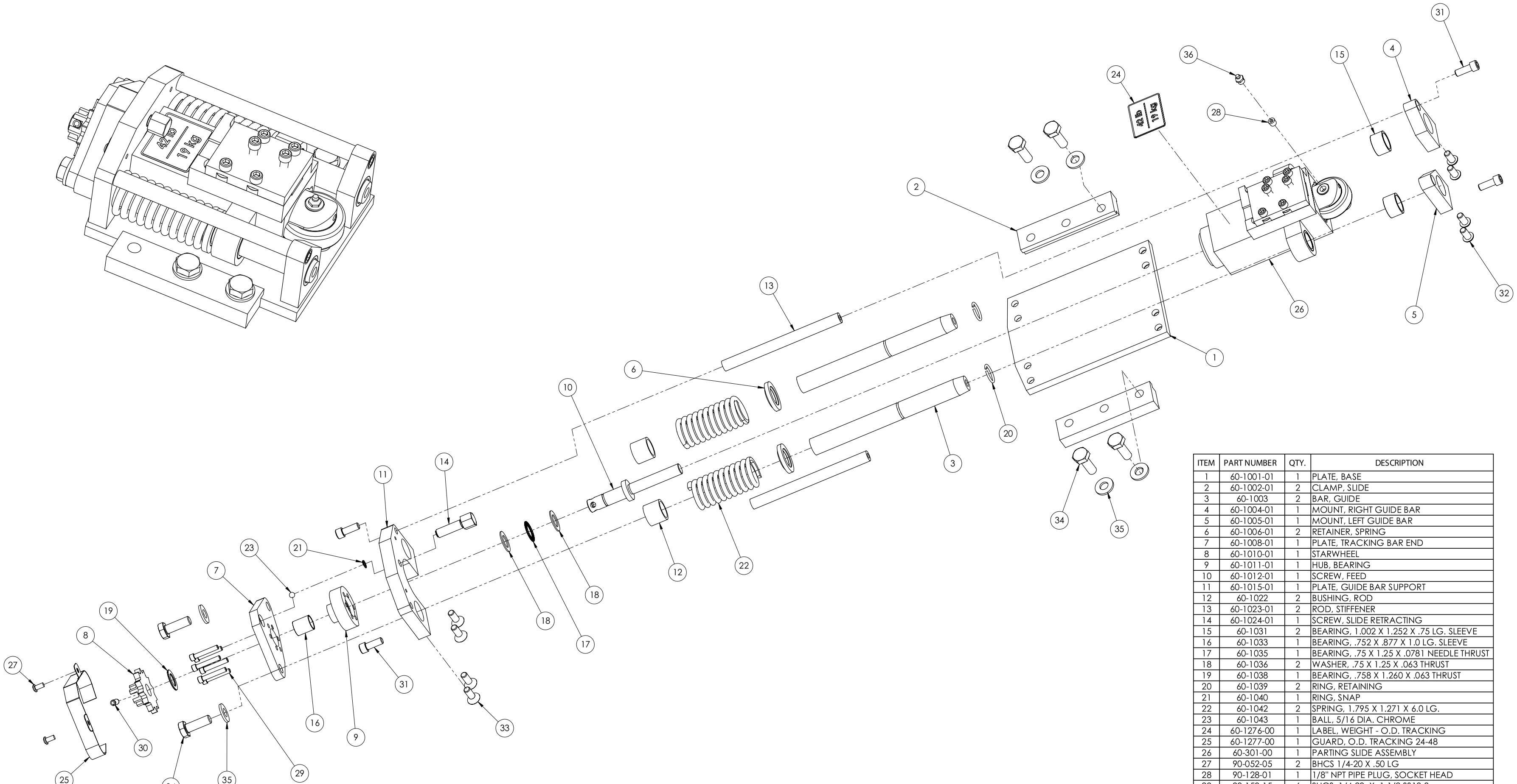
Return equipment for repair to the following address.

E.H. Wachs
600 Knightsbridge Parkway
Lincolnshire, Illinois 60069 USA

DRAWINGS AND PARTS LISTS

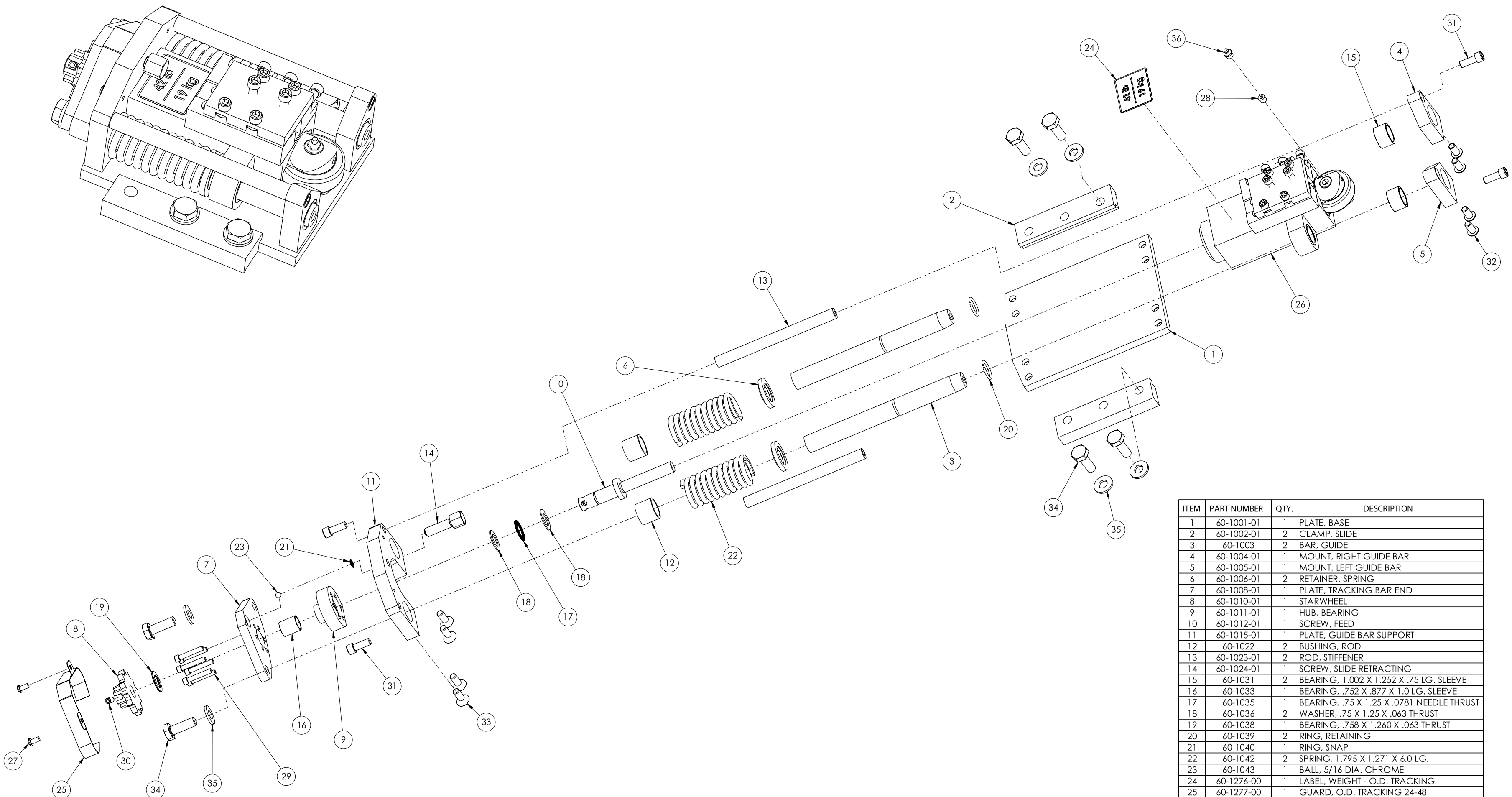
The drawings on the following pages illustrate the components of the trip and the O.D. tracking slides. Each drawing includes a bill of materials.

Both the parting slide and beveling slide are shown fully illustrated. They are identical except for the tool holder assembly.



Parts and Assembly
60-446-01, Large O.D. Tracking Slide
Parting Slide

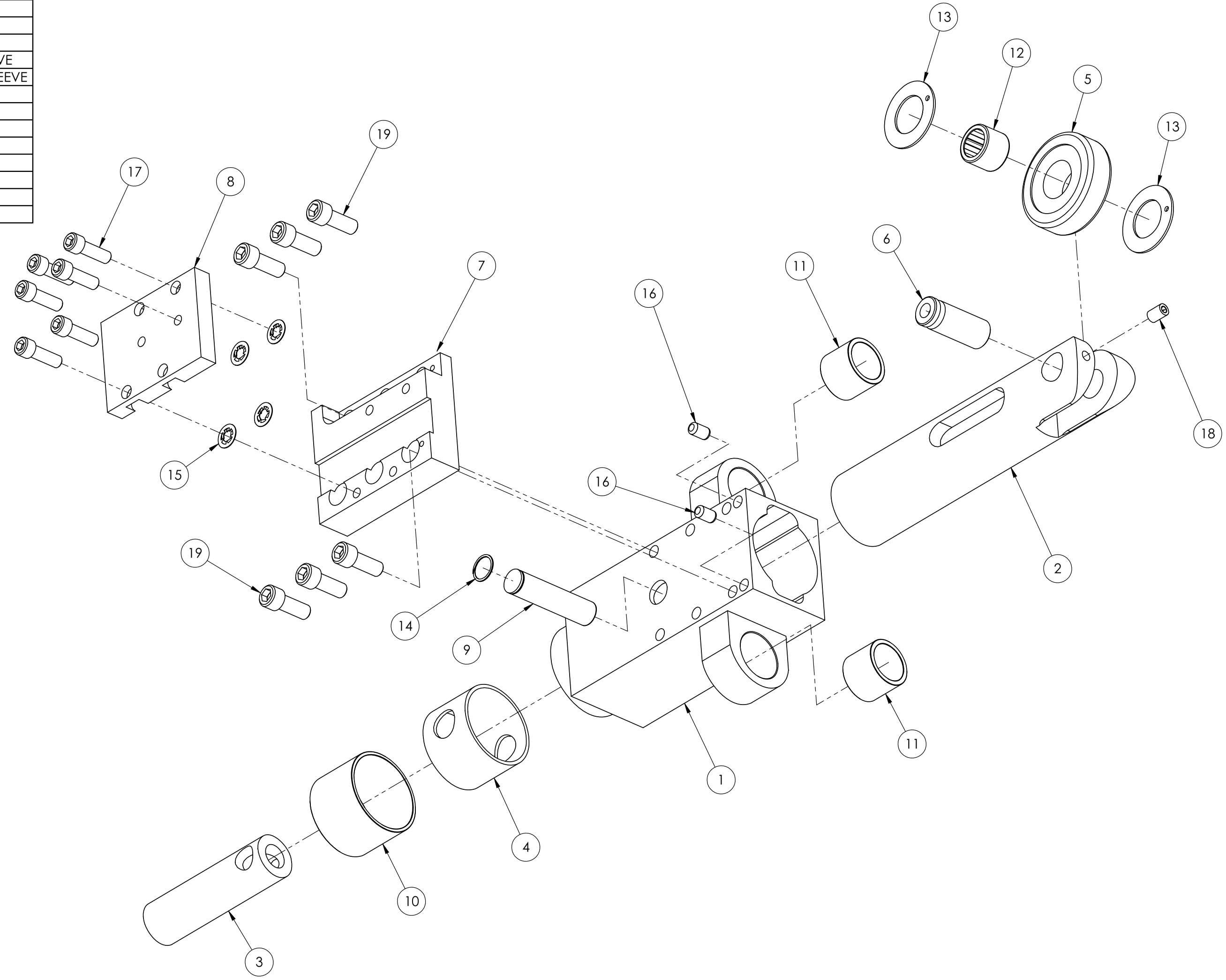
ITEM	PART NUMBER	QTY.	DESCRIPTION
1	60-1001-01	1	PLATE, BASE
2	60-1002-01	2	CLAMP, SLIDE
3	60-1003	2	BAR, GUIDE
4	60-1004-01	1	MOUNT, RIGHT GUIDE BAR
5	60-1005-01	1	MOUNT, LEFT GUIDE BAR
6	60-1006-01	2	RETAINER, SPRING
7	60-1008-01	1	PLATE, TRACKING BAR END
8	60-1010-01	1	STARWHEEL
9	60-1011-01	1	HUB, BEARING
10	60-1012-01	1	SCREW, FEED
11	60-1015-01	1	PLATE, GUIDE BAR SUPPORT
12	60-1022	2	BUSHING, ROD
13	60-1023-01	2	ROD, STIFFENER
14	60-1024-01	1	SCREW, SLIDE RETRACTING
15	60-1031	2	BEARING, 1.002 X 1.252 X .75 LG. SLEEVE
16	60-1033	1	BEARING, .752 X .877 X 1.0 LG. SLEEVE
17	60-1035	1	BEARING, .75 X 1.25 X .0781 NEEDLE THRUST
18	60-1036	2	WASHER, .75 X 1.25 X .063 THRUST
19	60-1038	1	BEARING, .758 X 1.260 X .063 THRUST
20	60-1039	2	RING, RETAINING
21	60-1040	1	RING, SNAP
22	60-1042	2	SPRING, 1.795 X 1.271 X 6.0 LG.
23	60-1043	1	BALL, 5/16 DIA. CHROME
24	60-1276-00	1	LABEL, WEIGHT - O.D. TRACKING
25	60-1277-00	1	GUARD, O.D. TRACKING 24-48
26	60-301-00	1	PARTING SLIDE ASSEMBLY
27	90-052-05	2	BHCS 1/4-20 X .50 LG
28	90-128-01	1	1/8" NPT PIPE PLUG, SOCKET HEAD
29	90-150-15	6	SHCS, 1/4-20 X 1-1/2 SS18-8
30	90-166-10	1	PIN, 5/16 X 1.0 ROLL SS
31	90-170-10	4	SHCS, 3/8-16 X 1.0 SS18-8
32	90-172-07	4	BHCS, 3/8-16 X 3/4 SS
33	90-173-10	4	FHCS, 3/8-16 X 1.0 SS
34	90-191-15	6	HHCS, 1/2-13 X 1-1/2 GRD 8 ULTRACOAT
35	90-195-52	6	WASHER, 1/2 FLAT SS18-8
36	90-500-02	1	GREASE FITTING, 1/8 NPT STR.

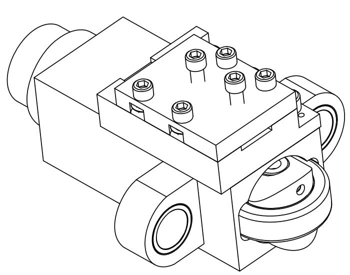


ITEM	PART NUMBER	QTY.	DESCRIPTION
1	60-1001-01	1	PLATE, BASE
2	60-1002-01	2	CLAMP, SLIDE
3	60-1003	2	BAR, GUIDE
4	60-1004-01	1	MOUNT, RIGHT GUIDE BAR
5	60-1005-01	1	MOUNT, LEFT GUIDE BAR
6	60-1006-01	2	RETAINER, SPRING
7	60-1008-01	1	PLATE, TRACKING BAR END
8	60-1010-01	1	STARWHEEL
9	60-1011-01	1	HUB, BEARING
10	60-1012-01	1	SCREW, FEED
11	60-1015-01	1	PLATE, GUIDE BAR SUPPORT
12	60-1022	2	BUSHING, ROD
13	60-1023-01	2	ROD, STIFFENER
14	60-1024-01	1	SCREW, SLIDE RETRACTING
15	60-1031	2	BEARING, 1.002 X 1.252 X .75 LG. SLEEVE
16	60-1033	1	BEARING, .752 X .877 X 1.0 LG. SLEEVE
17	60-1035	1	BEARING, .75 X 1.25 X .0781 NEEDLE THRUST
18	60-1036	2	WASHER, .75 X 1.25 X .063 THRUST
19	60-1038	1	BEARING, .758 X 1.260 X .063 THRUST
20	60-1039	2	RING, RETAINING
21	60-1040	1	RING, SNAP
22	60-1042	2	SPRING, 1.795 X 1.271 X 6.0 LG.
23	60-1043	1	BALL, 5/16 DIA. CHROME
24	60-1276-00	1	LABEL, WEIGHT - O.D. TRACKING
25	60-1277-00	1	GUARD, O.D. TRACKING 24-48
26	60-302-00	1	BEVELING SLIDE ASSEMBLY
27	90-052-05	2	BHCS 1/4-20 X .50 LG
28	90-128-01	1	1/8" NPT PIPE PLUG, SOCKET HEAD
29	90-150-15	6	SHCS, 1/4-20 X 1-1/2 SS18-8
30	90-166-10	1	PIN, 5/16 X 1.0 ROLL SS
31	90-170-10	4	SHCS, 3/8-16 X 1.0 SS18-8
32	90-172-07	4	BHCS, 3/8-16 X 3/4 SS
33	90-173-10	4	FHCS, 3/8-16 X 1.0 SS
34	90-191-15	6	HHCS, 1/2-13 X 1-1/2 GRD 8 ULTRACOAT
35	90-195-52	6	WASHER, 1/2 FLAT SS18-8
36	90-500-02	1	GREASE FITTING, 1/8 NPT STR.

Parts and Assembly
60-446-02, Large O.D. Tracking Slide
Parting/Beveling Slide

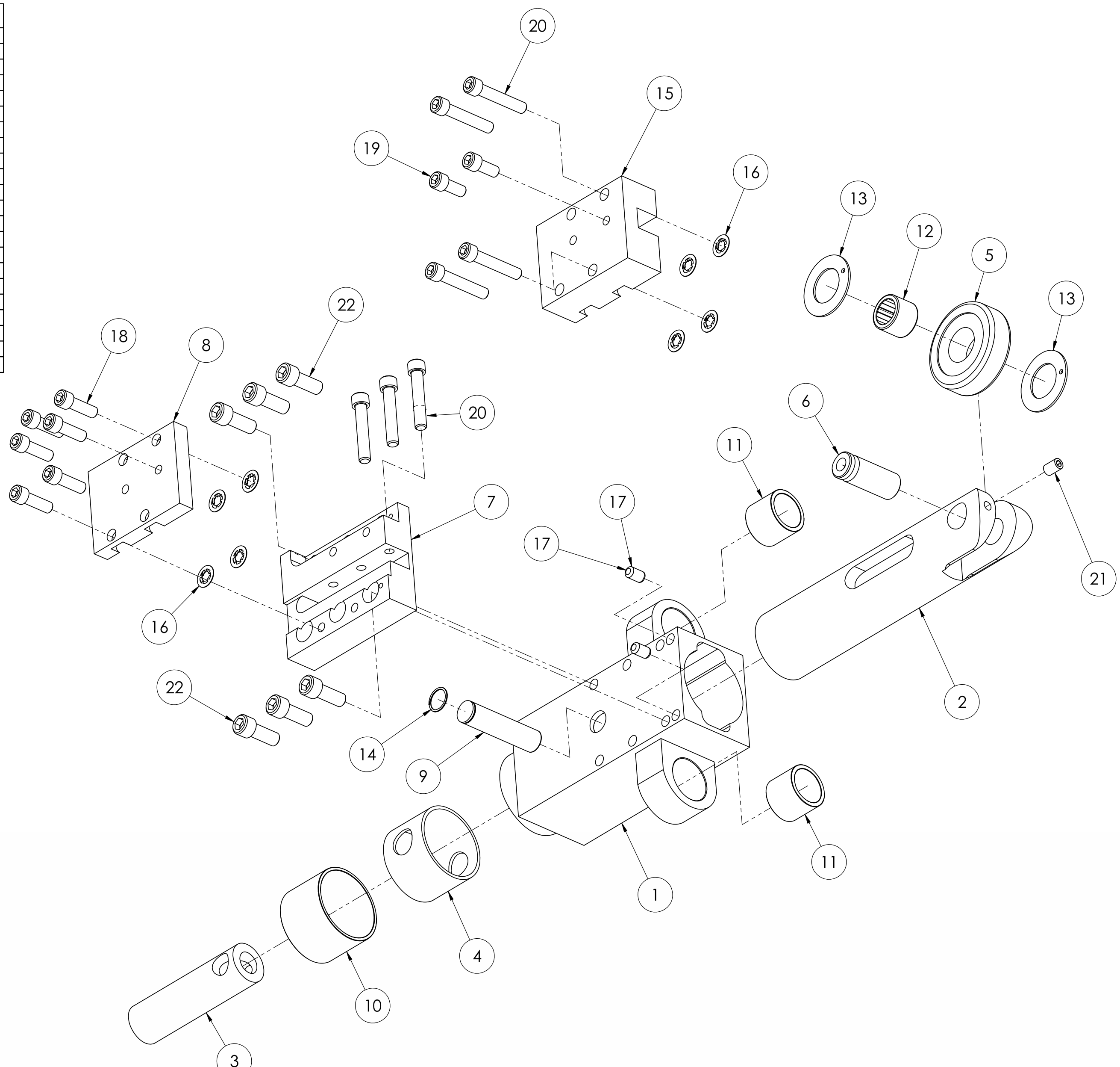
ITEM	PART NUMBER	QTY.	DESCRIPTION
1	60-1007-01	1	SLIDE, TOOL
2	60-1009-01	1	BAR, TRACKING
3	60-1013	1	NUT, FEED
4	60-1014	1	BUSHING, TRACKING BAR
5	60-1016-01	1	WHEEL, TRACKING
6	60-1017	1	PIN, TRACKING WHEEL
7	60-1019-01	1	HOLDER, PARTING TOOL
8	60-1020-01	1	PLATE, TOOL RETAINING
9	60-1021	1	PIN, SLIDE COUPLING
10	60-1030	1	BEARING, 2.0 X 2.188 X 1.5 LG. SLEEVE
11	60-1032	2	BEARING, 1.002 X 1.252 X 1.0 LG. SLEEVE
12	60-1034	1	BEARING, .75 X 1 X .75 LG. NEEDLE
13	60-1037	2	WASHER, 1.0 X 1.75 X.058 THRUST
14	60-1041	1	RING, .585 X .025 RETAINING
15	90-065-09	4	NUT, 5/16 PUSH
16	90-066-05	2	PIN, 5/16 X 1/2 DOWEL
17	90-160-00	6	SHCS, 5/16-18 X 1 SS18-8
18	90-164-05	1	SSS, 5/16-18 X 1/2 SS18-8
19	90-170-10	6	SHCS, 3/8-16 X 1.0 SS18-8

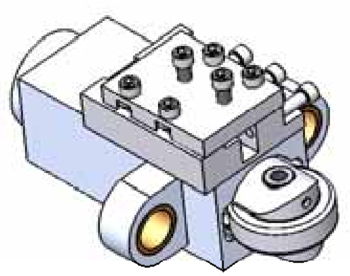




PARTING SLIDE ASSEMBLY 60-301-00

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	60-1007-01	1	SLIDE, TOOL
2	60-1009-01	1	BAR, TRACKING
3	60-1013	1	NUT, FEED
4	60-1014	1	BUSHING, TRACKING BAR
5	60-1016-01	1	WHEEL, TRACKING
6	60-1017	1	PIN, TRACKING WHEEL
7	60-1018-11	1	HOLDER, COMBINATION TOOL
8	60-1020-01	1	PLATE, TOOL RETAINING
9	60-1021	1	PIN, SLIDE COUPLING
10	60-1030	1	BEARING, 2.0 X 2.188 X 1.5 LG. SLEEVE
11	60-1032	2	BEARING, 1.002 X 1.252 X 1.0 LG. SLEEVE
12	60-1034	1	BEARING, .75 X 1 X .75 LG. NEEDLE
13	60-1037	2	WASHER, 1.0 X 1.75 X.058 THRUST
14	60-1041	1	RING, .585 X .025 RETAINING
15	60-1051-00	1	COVER, OUTSIDE BEVEL TOOL
16	90-065-09	8	NUT, 5/16 PUSH
17	90-066-05	2	PIN, 5/16 X 1/2 DOWEL
18	90-160-00	6	SHCS, 5/16-18 X 1 SS18-8
19	90-160-07	2	SHCS, 5/16-18 X 3/4 SS18-8
20	90-160-17	7	SHCS, 5/16-18 X 1-3/4 SS18-8
21	90-164-05	1	SSS, 5/16-18 X 1/2 SS18-8
22	90-170-10	6	SHCS, 3/8-16 X 1.0 SS18-8

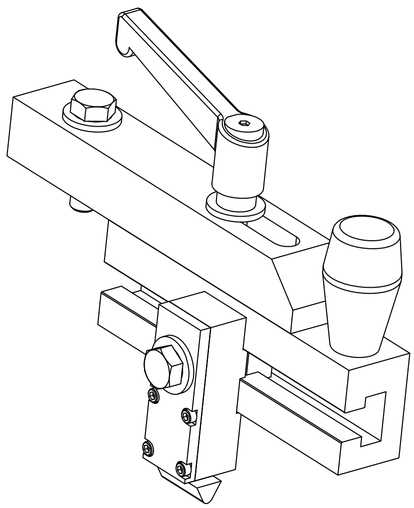


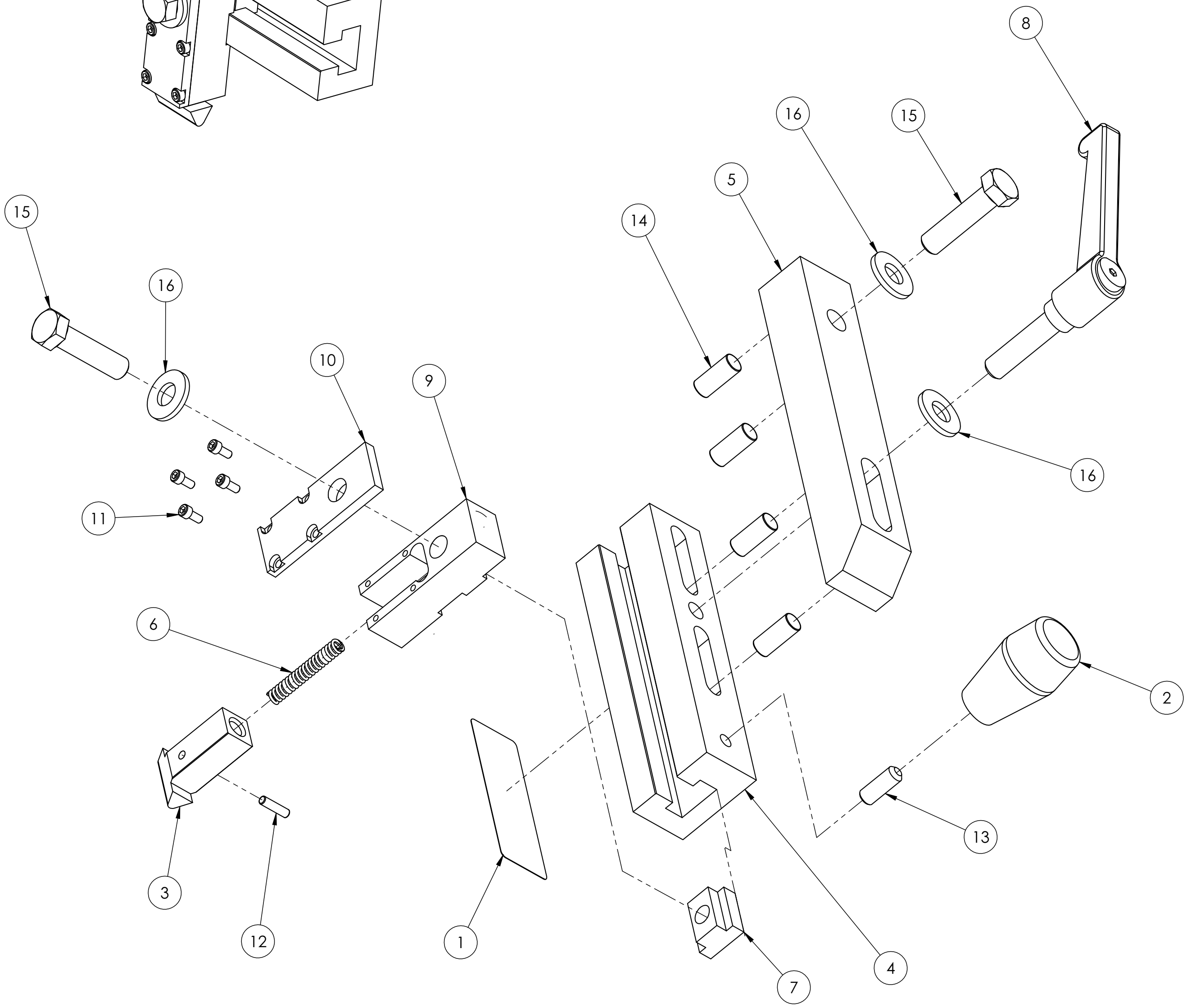


BEVELING SLIDE ASSEMBLY 60-302-00

Parts and Assembly
60-446-03, Trip Assembly for Large O.D. Tracking Slide

ITEM	PART NUMBER	QTY.	DESCRIPTION
1	03-113-04	1	LABEL, WARNING-MOVING PARTS
2	20-033-00	1	KNOB
3	60-1025-01	1	TRIP, FEED
4	60-1028-01	1	BLOCK, TRIP POSITIONING
5	60-1029-01	1	BLOCK, TRIP MOUNTING
6	60-1044	1	SPRING, .329 X .211 X 2.0 LG.
7	60-1045	1	T-SLOT NUT, .625 X 1.0 X 1/2-13 THD. SS
8	60-1046	1	HANDLE
9	60-1101-00	1	HOUSING, FEED TRIP
10	60-1102-00	1	COVER, TRIP HOUSING
11	90-020-03	4	SHCS, 8-32 x 3/8
12	90-146-06	1	PIN, 3/16 X 3/4 DOWEL SS
13	90-174-10	1	SSS, 3/8-16 X 1.0 SS
14	90-186-10	4	PIN, 7/16 X 1.0 DOWEL SS
15	90-191-20	2	HHCS, 1/2-13 X 2.0 SS18-8
16	90-195-52	3	WASHER, 1/2 FLAT SS18-8





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